Preface

The workshop on trends and advances in numerical modeling of clouds and precipitation was held in Israel at Kibbutz Ginosar on 17–20 November 1997.

The workshop was organized following the successful completion of a joint research project by two cloud modeling groups at the two leading universities in Israel: The Hebrew University of Jerusalem (HUJ) and Tel-Aviv University (TAU). The project was dedicated to the development of numerical spectral (bin) cloud microphysics models and their applications in cloud physics and environmental sciences. The research project and the subsequent workshop were financially supported and sponsored by the Israeli Academy of Science and Humanity with partial support by the two universities.

The aim of the workshop was to bring together scientists from both experimental and theoretical background in order to find ways to define the type of measurements needed to better validate model results and also to identify the critical areas that need further exploration. The workshop consisted of invited scientists from the USA, Germany, France, Russia, and Israel. In addition, a number of graduate students from a number of universities in Israel participated in the discussions and in the social events.

The nine papers included in this issue represent only part of the work presented in the workshop, but in our view they correctly reflect the topics that were discussed. They show some new directions in state-of-the-art numerical modeling of cloud processes as well as in the theory of microphysical processes. Significant attention is paid to the effects of cloud–aerosol interaction on precipitation formation, the role of giant aerosol particles, cloud chemistry and the effects of in-cloud scavenging on atmospheric cleaning. New effective algorithms for simulating cloud microphysical processes are presented. The ability of the state-of-the-art cloud-resolved models to simulate mesoscale phenomena is verified in several case studies. Some of the theoretical studies are dedicated to the role of turbulence in the development of the droplet spectrum in clouds and the formation of spatial inhomogeneities in the concentration of inertial particles (droplets and aerosols).

For some of the participants, this was their first visit to Israel. We hope their stay was enjoyable and fruitful. We are looking forward to seeing them again soon as our partners in research projects or as tourists.
We owe a great debt of gratitude to the reviewers of the papers who did such a thorough job.

*Guest editors*
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